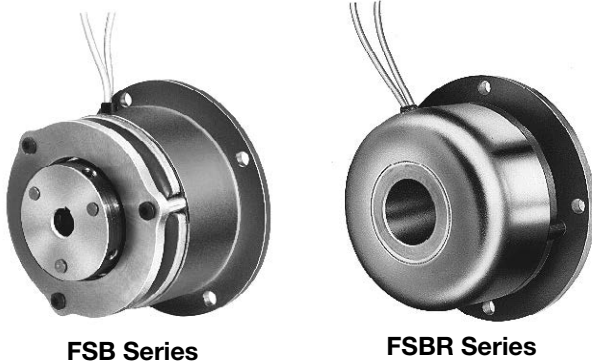


FSB and FSBR Series Power Off Brakes

Instruction Manual

**P-8154-IDI
040-10110**



Pre-Assembly Inspection

Step 1

All parts should be examined for damage from shipping and handling. Measurements should be taken to ensure parts meet application requirements such as hub bore, voltage, and mounting bolt circle. All parts must be clean and free of foreign material prior to assembly.

Note: Do not hi-pot brakes with AC operating voltages as that will damage the internal rectifier.

Installation of Keys

Step 2

Install keys in respective shafts. Keys should fit keyseat with a tight fit on the sides and slight clearance over the key.

Step 3 for FSB Series

Mount the brake field assembly to the motor or mounting surface using mounting holes or mounting flange. Determine if the brake hub is a hex hub, square hub, or zero-backlash hub. If using washers or a grounding terminal when mounting Models FSB 001 or FSB 003; the washer or terminal inside diameter must be 0.120 inches maximum. If the grounding terminal is made from a soft material, a suitable steel washer must be used under the terminal.

Note: Brake mounting flange carries reaction load - secure tightly. The perpendicularity of this mounting surface, with respect to the shaft, is not to exceed .005 inch (.13mm) total indicated readout (T.I.R.) at a diameter equal to the brake body outside diameter. Also, the concentricity between the mounting holes or pilot diameter and the shaft should not exceed .010 inch (.25mm) T.I.R. for units FSB 001, 003, 007, 015 and .020 inch (.51mm) T.I.R. for units FSB 035, 050, 100.

Hex or Square Drive Hub

Install hub with set screws outboard, being certain hex or square hub mates with friction disc. With the brake coil not energized, bottom out the hub on the armature plate, back hub away from armature .010 to .025 inch and tighten set screws to recommended torque level- see chart.

Note: Models FSB 007 and FSB 015 hex hubs do not bottom out on armature plate.

Zero-Backlash Hub

Position the friction-hub assembly on the shaft such that the friction disc runs freely with the coil energized. Center the friction disc using feeler gauges (see Figure 1). Tighten the set screws to recommended torque levels-see chart. Go to Step 5.

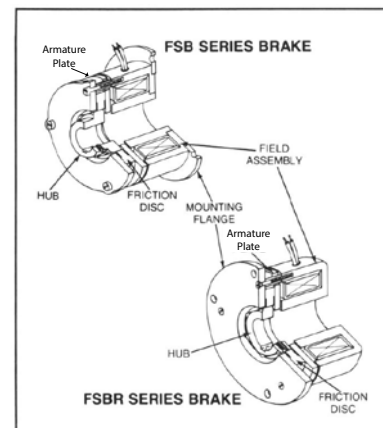
Step 3 for FSBR Series

Install the hub onto the shaft relative to mounting surface per dimension "A"-see figure 2. Tighten the hub set screws to the recommended torque- see chart 1. Mount the field assembly over the hub and secure the mounting flange to the mounting surface.

Note: Proper hub position is required to prevent the hub from contacting the clapper plate or mounting surface. Flange carries brake reaction load; secure tightly. The perpendicularity of the mounting surface with respect to the shaft, is not to exceed 0.005 inches (.13mm) total indicated readout (T.I.R.) at a diameter equal to the brake field assembly outside diameter. Concentricity between the mounting holes and the shaft must not exceed .020 inch (.25mm) T.I.R.

Step 4

Wire the two leads to the power supply. Inertia Dynamics power supplies are available with a wiring diagram showing the proper electrical connections.



Step 5

After unit has operated for a short period, check air gaps, drive component mounting, and set screw torque.

Chart 1

Imperial		Metric	
Set Screw Size	Recommended Tightening Torque	Set Screw Size	Recommended Tightening Torque
#4	5 in.-lbs.	M3	1.13 Nm
#5	9.5 in.-lbs.	M4	2.67 Nm
#6	9.5 in.-lbs.	M5	5.31 Nm
#8	19.4 in.-lbs.	M6	9.10 Nm
#10	33.5 in.-lbs.		
1/4"	78.0 in.-lbs.		

Burnishing Procedure

FSB and FSBR Series Brakes are not pre-burnished and need to be “run-in” to develop rated torque. Burnishing is a wearing-in or mating process that ensures the highest possible output torque will be obtained from the individual unit.

1. If possible, burnish units in their final application or location to ensure alignment of the mated parts.
2. If units cannot be burnished in final application, mount units in a test stand observing concentricity and alignment.
3. Rotate hub member of the brake at the suggested RPM (see chart 2) while holding the field assembly stationary to obtain a forced slip while the unit is not energized.
4. Drive the brake hub for a three (3) minute forced slip.
5. Measure the static (breakaway) torque.
6. Static torque should be at the catalog rating- see chart 2.
7. If the brake does not meet the catalog rating, repeat Step 1 after a cool down period of five (5) minutes until the brake meets the rated value.

Note: If the brake is required to decelerate a large inertia load or a moderate inertia load from high speed, the normal slip that will occur during brake engagement may be sufficient to burnish the brake. Inertia Dynamics brakes typically produce 50-90% of their rated torque without burnishing. Customers must determine if the pre-burnish torque is adequate. Do not prolong burnishing beyond a three minute duration. Excessive burnish time will cause heat build-up at the friction faces resulting in poor performance. Care must be taken to prevent contamination of the friction faces with oil or dirt particles during the burnishing process.

Replacement Parts (FSB & FSBR Units)

Adjustments are made at the factory to ensure proper gaps, etc. Since virtually all components will wear during normal operation, it is suggested that when replacement is necessary, the entire unit be replaced.

⚠ WARNING Because of the possible danger to person(s) or property from accidents, which may result from the improper use of products, it is important that correct procedures be followed: Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided, and are neither provided by Inertia Dynamics nor are the responsibility of Inertia Dynamics.



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Chart 2

Unit Size	Slip RPM +/- 10%	Imperial Standard Static Torque Rating	Metric Standard Static Torque Rating
001	500	1 in-lbs.	0.11 Nm
003	500	3 in-lbs.	0.34 Nm
007	380	7 in-lbs.	0.79 Nm
015	320	15 in-lbs.	1.69 Nm
035	300	35 in-lbs.	3.95 Nm
050	260	50 in-lbs.	5.65 Nm
100	100	100 in-lbs.	11.30 Nm

Figure 1

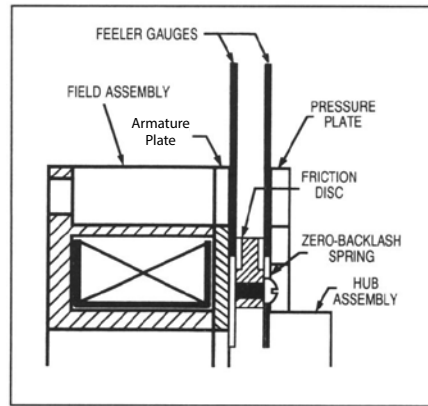


Figure 2

